Number 20 September 2014

McKinsey on **Payments**

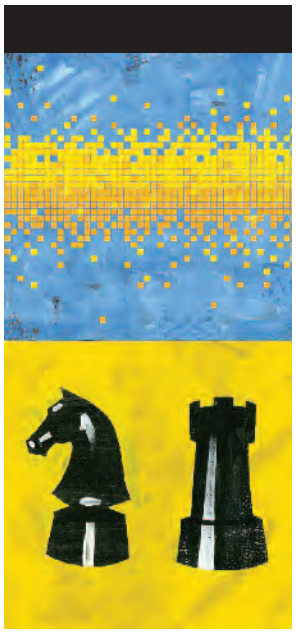
Foreword 1

Recapturing banking's analytics edge 3
Banks were pioneers in the early days of analytics innovation. However, to regain their position in the vanguard, they need to adjust their approach for a new era. The task begins with a redesign of organizational structure for the analytics group.

End-to-end digitization for securities services 11
The securities services industry accounts for nearly $100 billion in worldwide revenues. But with seismic changes underway in regulation, customer expectations and revenue structure, industry players will need to target gains in efficiency, accuracy and scalability.

A mobile path to financial inclusion: An interview with Kamal Quadir, CEO of bKash 18
McKinsey on Payments sits down with the leader of Bangladesh's mobile money service to discuss how the firm got its start, how the model works and the factors behind its success to date.

Transforming national payments systems 23
A number of countries are planning upgrades to their payments infrastructures. McKinsey argues that these systems need to be better, not just faster, than those they are replacing. The path forward starts with a comprehensive look at use cases and design options.



End-to-end digitization for securities services

In almost every aspect of financial services, banks and non-banks have responded decisively to a host of disruptive challenges by sharpening their strategic focus, strengthening their core offerings and deciding which markets to serve. In securities services as well as across the full spectrum of transaction services, high volume and fast growth are prompting organizations to find innovative ways to grow at scale and keep costs competitive. This article examines how rapid process digitization, guided by advanced lean principles of workflow redesign, can increase scalability by as much as 80 percent within a matter of months. Executed properly, this process of *end-to-end digitization* (see sidebar, page 12) can also dramatically improve customer satisfaction and reduce operational risk.

João Bueno

Yran Bartolumeu Dias

Alexandre Sawaya

Jorge Valadas

Disruption in global securities services

Broad-ranging changes in regulation, client expectations and revenue structure are remaking securities services. This is a large industry, with $65 trillion in assets under management (AUM)—a sum equivalent to 90 percent of global GDP—and revenues of nearly $100 billion worldwide, according to McKinsey's Global Banking Pools. But the structure of the industry is evolving rapidly. While the European and North American markets account for 75 percent of AUM, the Asia-Pacific region now generates more revenue than other regions. With annual growth rates of 13 percent in recent years, Asia-Pacific can be an important source of growth for organizations that develop the skills and competencies to respond to diverse client demands across various local markets (Exhibit 1, page 13).

Securities services providers also face rising regulatory challenges, which vary from region to region. In Europe, for example, the UCITS IV directive contains some complex revisions of the preceding directive. The Solvency II regime for insurers will be introduced in 2016 and the rollout of the Basel III rules is proceeding apace, with higher minimum capital requirements and the liq-

uidity coverage ratio scheduled to be introduced next year. This will raise the cost of securities lending, which has traditionally been a source of cross-subsidization for other services.

Client demands are rising as well. The baseline expectation today is that any securities services provider will handle trades promptly, without error and at low cost, while also delivering up-to-the-minute data and analytics and market intelligence to help clients boost their financial performance.

In addition, clients throughout the industry have become highly sensitive to cost, which is reflected in the trend toward passive investment strategies and the shifting balance between settlement and fund administration revenue. Top-line custody revenue has risen as transaction volumes have increased. By contrast, top-line revenue from fund administration and trusteeships has been flat, reflecting downward pressure on pricing with investors increasingly vigilant about costs (Exhibit 2).

EdgE methodology

EdgE, or "end-to-end digitization," is a model for 360-degree process transformation combining lean methodology as the basis for redesigning processes with McKinsey's Agile methodology for technology innovation. The approach enables automation of the full range of customer interactions and middle-office activities for transaction banking and securities services, including account set-up, customer service, information reporting, NAV calculation, reconciliation and accounting processes.

From retail payments to trade finance, as well as securities processing, transaction-based businesses rely heavily on data collection and analysis, often with a high degree of manual intervention to transfer data from one system to another. There are significant savings to be gained by applying advanced lean techniques to eliminate manual processing entirely or reduce it as much as possible.

In addition, McKinsey's Agile methodology supports a two-speed approach to IT redesign. For example, financial institutions can identify high-value processes (such as NAV calculation, asset ticketing) that can be digitized rapidly without undertaking major changes to underlying IT infrastructure. This makes an IT organization more flexible and better able to respond to fast-changing business conditions, such as competitors' innovations and changes in regulatory requirements. The Agile process consists of iterations of weeks, rather than months, leading to a short development cycle and faster launches. The process achieves higher-quality functioning and greater stability, thanks to early feedback from customers with live, in-the-field testing. Agile is best used for incremental improvements to existing technology, with known system architecture.

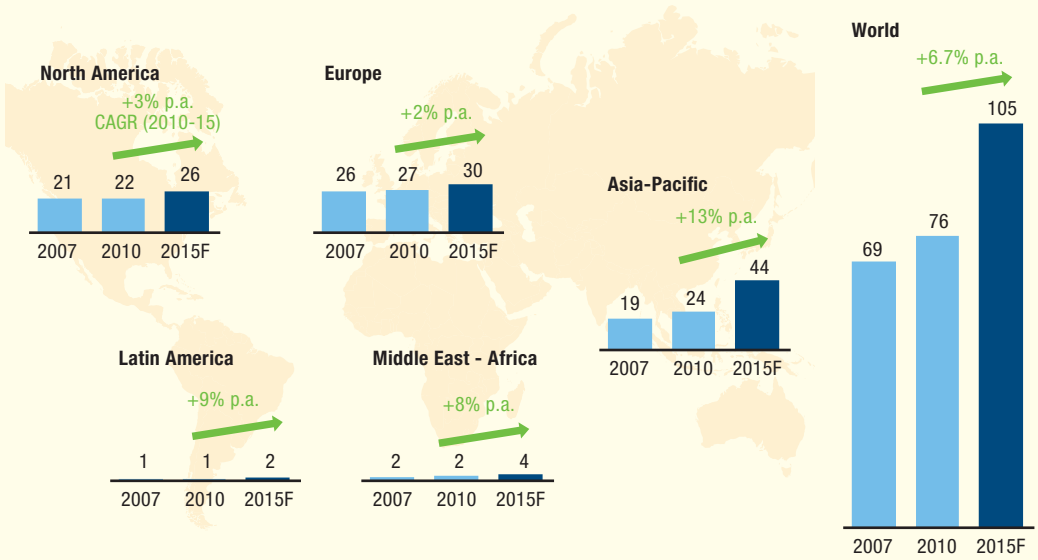
The "roll-in" or "reverse take-over" approaches to scaling, where these are possible, are highly recommended. The establishment of a center of excellence to handle the new digital process allows for the gradual transformation of the organizational culture and development of the new skills and competencies required for the digital environment. Employees join the new group as volumes shift gradually from the legacy process. Close collaboration between the IT group and business groups is one of the hallmarks of the approach, which depends on the dedication of expert resources, including project managers and developers with strong business domain knowledge and specialized technical skills. This collaboration allows for the redesign of processes on the basis of the "future state," rather than simply automating the manual workflow.

The EdgE improvement process includes a tested methodology to deliver selected projects in line with client-defined specifications (rapid digitization methodology), together with a reference guidebook describing the methodology, best practices and lessons from prior experiences. An operationally "minimal viable product" is often the first outcome—the digitized process as an outcome of the pilot on which the methodology has been tested. The approach relies on skilled business, tech and change teams to participate in the pilot, gain the capabilities and drive the wider rollout.

Exhibit 1

Strong growth in global revenues makes securities services a top priority for global specialists

Securities services revenue
$ billion

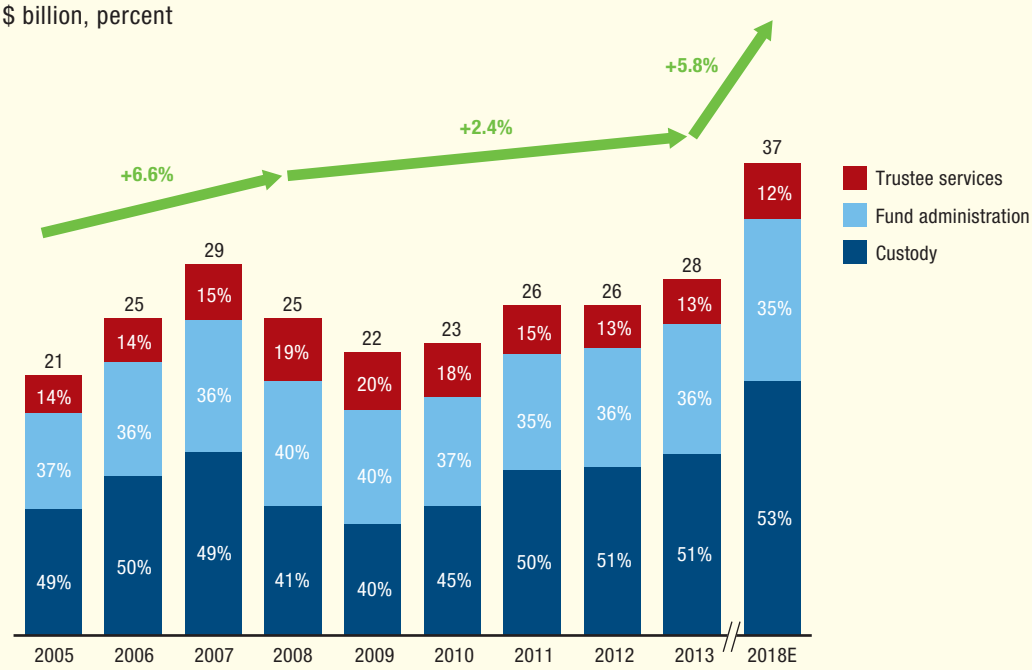


Source: McKinsey Global Banking pools

Exhibit 2

In Europe, securities services revenue is rising, but the share of revenue from fund administration and trustee services will remain flat

Europe revenue, 2005-2018
$ billion, percent



Source: McKinsey Global Banking pools

Financial institutions have responded to these diverse pressures by exiting the business or by relying more heavily on outsourcing. International firms and specialists have emerged—including BNP Paribas, BNY Mellon, CACEIS, Citi, JP Morgan, Société Générale and State Street—to compete successfully in the shifting landscape. Their approaches differ but have been shaped by each institution's careful consideration of the scope of its core offering and subsequent clear choices about which markets and segments to serve. Technology is at the center of this strategic evaluation, as it is key to cost reduction, regulatory compliance and competitive distinction. Automating processing and servicing on the basis of a platform that is both integrated and flexible is becoming an imperative for firms that intend to win in securities services over the long term.

The current challenge for most securities services organizations is to extend data integration and straight-through-processing capabilities beyond transactions to all other areas of the business.

A new approach to systems integration and process redesign

The core product of the securities service business is robust data management and high-powered analytics to deliver timely insights with accuracy, speed and security. At the heart of the business is the net asset value (NAV) calculation—a composite "snapshot" of the value of a bucket of certificates based on daily market trading. The NAV calculation is simple in concept, but requires the ability to collect in a timely and accurate fashion current information from diverse markets, exchanges and reporting agencies.

The current challenge for most securities services organizations, therefore, is to extend data integration and straight-through processing (STP) capabilities beyond transactions (processing, clearing and settling and posting) to all other areas of the business, so that information can be refreshed instantaneously, not only lowering costs, but also reducing risk and improving service to customers.

A case study from Brazil

An extensive review and redesign of operations can have a significant impact on an organization's competitive position. The experience of a large securities processing organization in Brazil illustrates clearly the benefits of such an effort. The organization had grown quickly, both through organic means and a succession of mergers, which had resulted in a complex agglomeration of fragmented systems. Adding new volumes was costly, as processing involved significant manual intervention, and the risk of errors increased as staff were added to expand capacity.

Seeking to integrate its systems and streamline processes, the organization undertook a program of end-to-end digitization in the area of fund administration. The effort focused on client on-boarding and daily activities, including account setup, NAV calculation, transaction ticketing (for tracking a trade from order to settlement), pricing, settlement accounting and reconciliation.

By taking the end-to-end approach to digitization, the organization is eliminating manual work in a number of functions, thereby achieving STP in many transaction-related activities. This transformation also reduces significantly the need for manual intervention in other areas, including customer inquiries, document management and decision analytics. Efficiency gains reach an average of 15 to 20 percent, with the biggest increases in processing, set-up, reconciliation and accounting. But most importantly, scalability improvements of up to 80 percent are expected as operations scale up in the coming years, making it possible to continue fast growth with minimal incremental costs, a crucial advantage in a fiercely competitive market (Exhibit 3).

Digital tools not only help streamline internal processes and reduce manual work, but also improve service and strengthen relationships by giving customers more control in managing their accounts. Digital documents and forms can largely eliminate paper and face-to-face interaction, thus reducing time spent on filling out forms, key customer data, and so on. In cases where paper forms are necessary, data can be digitized through optical character recognition. Chat and video tools can be used in situations where person-to-person interaction is vital.

From lean to EdgE

Achieving benefits of this magnitude requires a high level of collaboration between IT and business experts. This is a key distinction of the end-to-end approach, which calls for the dedication of expert resources, including project managers and developers with strong business domain knowledge and specialized technical skills.

Lean principles provide the basis for IT developers and business experts to seek the maximum savings from digitization: cleaner data, simpler formats, fewer steps. The goal is to limit as much as possible human intervention to problem-solving that exceeds the capabilities of automated decision-making tools (Exhibit 4, page 16).

Exhibit 3

End-to-end digitization can deliver significant gains in efficiency, accuracy and scalability

Objectives	Metrics	Benefits	Examples of changes
Boost process scalability	**Funds and portfolios**	↑ 60-80%	Automated ticketing and asset pricing Introduced self-service tools for ticket status monitoring
Improve quality	**Errors and delays**	↓ Errors: 52% Delays: 49%	Streamlined and automated existing processes Improved team capabilities for complex pricing Created a dedicated client service team
Increase operations efficiency	**FTE**	↓ 15-20%	Reduced manual activities in net asset value calculation and reconciliation processes

Source: McKinsey analysis

Exhibit 4

A lean analysis can identify areas where waste can be eliminated through automation and intensive data analytics

Digital equivalent sources of "waste"

	Description	Example
Unnecessary physical interface	Activities that need physical presence of customers (e.g., in branch or on call)	Employee must analyze reconciliation mismatches
Manual inputs and physical capture	Processes that require inputs being captured manually and paper moved physically	Prices collected by employee and inputed manually into the system
Delayed verification	Checks and customer verification unnecessarily late in the customer journey	Minimal validation of inputs and focus on post-processing validation
Unnecessary data collection	Collating information during journey unnecessarily; limited re-use of existing customer information (including public data)	Same prices are collected by two different areas
Repetitive standard process and decision-making	Standard set of processing and decision-making activities performed manually in a repeated predictable manner	Many standard activities are carried out manually in net asset value processing
Linear capacity scaling	Process requires additional capacity and creates backlog to cope with volume growth and spikes	Increase in fund volume would currently entail hiring additional resources
System rekeying	Need for manual transfer of similar data between multiple IT systems; using multiple screens for a task	Lack of integration between systems
Reactive communication	Communication of status, often using physical channel like letter or call, only after customer and colleague follow-up	No self-service channel for status updates – customer needs to call

Source: McKinsey

In an end-to-end approach, developers typically release a software prototype within the first week. This allows IT experts to examine current processes in detail and play an integral role in recasting the entire workflow from the perspective of the fully integrated, maximally digitized "future state."

This close collaboration between IT and business experts produces significant gains, particularly as discrete factors such as inconsistent rounding conventions or excessive use of macros, replicated across dozens of individual processes, can be resolved promptly. In one case, developers working on automating the pricing of individual trades discovered that spreadsheet calculations depended on numerous unsecured macros. In the new process, spreadsheets are no longer used in pricing, and where macros are still used, the system now allows only authorized individuals to make changes to macros and alerts are sent to "process owners" when changes are made.

The establishment of a trial lab or "center of excellence" to handle the new digital process allows for live testing and refinement. The new process can scale up gradually, with people joining the digital group as they acquire new skills and competency. This model leads ultimately to a more stable product, due to user-feedback during live testing, from the early stages of process redesign. As

Digital leaders in securities services

A number of leading financial institutions are automating processes end-to-end, on the backbone of integrated systems serving multiple markets. Drawing data from several sources in diverse formats, these firms are delivering timely market insights tailored to individual requirements while significantly reducing operations costs. Increasingly, advisors and managers expect anytime-anywhere access in order to take advantage of time-sensitive opportunities.

State Street, for example, has formed Global Exchange, a separate business unit focused on end-to-end automation and high-powered analytics across diverse functions, from portfolio performance and risk analytics to electronic trading and clearing. Through State Street's Web portal, users can navigate easily across products such as custody, fund administration, securities finance and investment analytics.

Digital access via smartphones and tablets is increasingly common. CRV (previously known as Charles River) provides anytime-anywhere digital tools that allow users to track performance, place orders and act on compliance alerts. BNY Mellon offers distinct mobile apps, each with transaction capabilities, for three different enterprise service lines: asset management, liquidity management and cash management. These front-end digital tools tap into a robust architecture, including a single platform (Eagle Investment Systems) to streamline the investment process, with segmented reporting, data integrity, data integration, regulatory monitoring, analytics and risk management.

End-to-end digitization creates diverse opportunities across different areas of transaction banking, including high-value processes such as timely cash positioning in corporate cash management and credit evaluations of trade finance counterparties. In order to consolidate analytical processes, service providers should begin by mapping a multistage transformation of enterprise IT systems. This approach leads to a clear innovation strategy prioritizing digital tools that create the highest value for clients and the lowest near-term impact on IT architecture.

they shift focus from routine operations to analysis and problem solving, employees become more engaged in their work and satisfaction tends to rise.

* * *

The benefits of process improvements have been proven time and again, with significant productivity improvements seen on business and application development teams, along with drastic time-to-market reductions. In McKinsey's experience, the positive impact on operational processes ranges between 20 and 50 percent of the operating cost base on average, with up to 70 percent improvements for any given single process and a major reduction of delays to operate. Getting there requires alignment of top management across all functions, with a deep understanding of the advantages sought and a willingness to steer through the changes and turbulence at each phase of the journey.

João Bueno *is an associate principal in McKinsey's São Paulo office, where* **Yran Bartolumeu Dias** *is a principal,* **Alexandre Sawaya** *is a director, and* **Jorge Valadas** *is a consultant.*